

# **Low-Income Housing Tax Credit Properties and Access to Transit in the Triangle Region**

by

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A Masters Project submitted to the faculty  
of the University of North Carolina at Chapel Hill  
in partial fulfillment of the requirements  
for the degree of Master of Regional Planning  
in the Department of City and Regional Planning.

Chapel Hill

**2005**

Approved by:

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Daniel Rodriguez, Advisor

### **Acknowledgements**

First, the biggest thank you to Daniel Rodriguez, my advisor and collaborator, for his excellent feedback and consistent encouragement. He rocks. Second, a big thank you to all the kind folks who helped with data collection: Patrick McDonough at the Triangle Transit Authority, Amanda Henley at UNC-Chapel Hill Davis Library, Mark Shelburne at the North Carolina Housing Finance Agency, and Jeremy Raw at the DCHC MPO. And third, an equally big thank you to my awesome classmates for helping me talk through the ideas and work through the GIS: Erik Apinis, Allen Serkin, Jeff Grim, and Karl Lauff

## **1.0 Summary**

An important strategy of federal, state and local housing agencies for improving the quality of life of low-income housing residents is helping these residents locate in mixed-income, low-minority neighborhoods. Such a strategy often implies moving from urban to suburban areas, and by extension from transit-rich to transit-poor areas. Reduced transit access for low-income families is not an insignificant trade-off, as transportation is the second largest line item in a household's budget – primarily because of the associated costs of fuel, insurance, loan payments, and maintenance. This paper examines the relationship between low-income housing and public transportation, in particular for the federally sponsored Low Income Housing Tax Credit (LIHTC) program. The geographic focus of the study is the Research Triangle region in North Carolina, which includes the metropolitan areas of Orange, Durham, and Wake counties. The data analysis indicates that the current spatial pattern of LIHTC properties have basic accessibility to transit (i.e., are within a quarter-mile of a transit line). However, locational trends are shifting such that more LIHTC properties are being developed farther from transit lines, jeopardizing transit access for LIHTC residents. The major implication for the North Carolina Housing Finance Agency – the agency that sets the tax credit award criteria – is an opportunity to emphasize the importance of transit access as a means to both better serve low-income housing residents and fund more desirable developments (in particular LIHTC properties slated for urban areas. At the same time, the results suggest that transit agencies should recognize and act on the importance of low-income housing locations when considering expansion of existing services.

## 2.0 Introduction

At the national, state, and local levels there is recognition from key government and research agencies<sup>1</sup> that low-income housing residents are located in areas with high levels of poverty concentration and that tend to be racially homogenous. Resultant impacts of living in these areas have included high levels of unemployment, poor housing conditions, high crime rates, lower literacy rates, poor health conditions and disinvested communities. The housing spatial patterns that we see today are the result of a confluence of factors including discriminatory housing policies, urban and suburban growth policies, and economic development trends. Consequently, the efforts at turning things around focus on housing programs, economic development programs, and mixed-use development ordinances, among others.

For the State of North Carolina, several agencies such as the NC Division of Community Assistance; NC Housing Finance Agency; and NC Department of Health and Human Services, Office of Economic Opportunity are anticipating a need for more rental assistance, including more construction of affordable housing. Among the current population of low-income renters in the state, those with severe cost problems have increased by 1% between 1990 and 2000 (NC Division of Community Assistance et. al., 2005). At the same time transportation costs are the second highest household expenditure (housing being the highest), compounding budget constraints on low-income

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<sup>1</sup> The US Department of Housing and Urban Development's Office of Policy Development & Research provides a wealth of information about fair housing, public and assisted housing and affordable housing research on the HUD USER website: [www.huduser.org](http://www.huduser.org). The Fannie Mae Foundation supports several housing periodicals including *Housing Policy Debate* and the *Journal of Housing Research* that frequently feature articles on fair housing and assisted housing programs; <http://www.fanniemae.foundation.org/programs/journals.shtml>. One of the focal issue of The Urban Institute is housing, including research on low-income housing conditions; [www.urban.org](http://www.urban.org).

families (STPP, 2000; US Dept. of Labor, 2002). As a result, this paper focuses on the location of assisted housing over time with respect to public transportation services. I examine this relationship with a specific case study of the Research Triangle region of North Carolina<sup>2</sup>, and focus exclusively on the federally sponsored Low-Income Housing Tax Credit (LIHTC) program. The tax credit program was selected for the following reasons:

- the influence public housing authorities have over setting eligibility criteria for recipients of the tax credits,
- the pending need for more new construction of affordable units,
- the comparatively larger percentage of LIHTC properties in suburban neighborhoods<sup>3</sup>, and
- the role that LIHTC designations can play in HOPE VI developments as well as Section 8 contracts.

It is the often-ignored relationship between housing and transportation that motivates my examination of transit access in the context of low-income housing.

The remainder of the paper is organized as follows. The next section provides the detailed background and motivation for pursuing this research topic. This is followed by a description of the methodology and analysis for understanding the trends and describing the current status of LIHTC properties with respect to transit access in the Triangle. The final section includes a discussion of the results and draws some conclusions about future implications of affordable housing and transit.

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<sup>2</sup> This includes the cities of Raleigh, Durham, Chapel Hill, Carrboro, Cary, and Hillsborough.

<sup>3</sup> Nationally, 42% of LIHTC properties are in the suburbs, compared to 24% for other federally assisted housing programs (Freeman, 2004).

### 3.0 Background and Motivation

#### 3.1 Publicly Assisted Housing

Since 1968, when Congress introduced both the Civil Rights and Housing Acts, the siting of publicly assisted housing has been under scrutiny for inequitable practices. Trends in affordable housing reveal that a majority of assisted housing units are located in areas with high concentrations of poverty, crime, illiteracy, and poor health conditions (Smith, 2002). Subsequently, many policies and programs have been geared towards reversing those trends, as detailed in Table 1.

Table 1. Chronology of Major Fair Housing Policy Developments			
Date	Executive	Legislative	Judicial
1962	Executive Order: required nondiscrimination in federal programs		
1964		Civil Rights Act: Title IV required nondiscrimination in federal programs	
1967			<i>Gautreaux</i> legislation initiated
1968		Civil Rights Act: Title VIII prohibited discrimination in its own programs and required HUD to affirmatively promote fair housing	
1970			<i>Shannon</i> litigation initiated
1971	Executive Order: supported the concept of fair housing		
1972	Site selection criteria developed by HUD		
1974		Housing and Community Development Act: gave new legislative direction to the fair housing goal	
1976	<i>Gautreaux</i> Housing Demonstration: metropolitan-wide housing demonstration in response to <i>Gautreaux</i> legislation		
1978		GAO report on HUD compliance with fair housing goals of Housing and Community Development Act	Litigation on application of HUD selection criteria

Table 1. Chronology of Major Fair Housing Policy Developments, cont.			
Date	Executive	Legislative	Judicial
1980	Housing and Community Development Act: reflected changing view of application of site selection criteria		
1981	Clarification of site selection criteria published		
1983	President Reagan transmits Fair Housing Amendments to Congress		
1984	HUD acts to desegregate housing		
Source: Rohe and Freeman, 2001			

Given current land use patterns, efforts at poverty deconcentration imply that affordable housing locations should move from center cities – the areas with the highest concentration of poverty and high levels of racial segregation – to the suburbs, where higher income and white-resident neighborhoods are more likely to be found. When we overlay these efforts with the spatial reality of current transportation networks, moving out of central cities often means moving from areas with high transit access to areas with lower transit access – or from less auto-dependent neighborhoods to neighborhoods that are highly auto-dependent. Because the population in question (i.e., low income households) is disproportionately dependent on transit for mobility and accessibility, the housing-transit connection is fundamental to the very reason that justifies desegregating assisted housing in the first place: achieving a higher quality of life for residents.

### 3.2 Assisted Housing in the US

The most recent “Picture of Subsidized Housing” from the US Department of Housing and Urban Development (HUD) shows that, nationally, assisted housing is occupied by 39 percent Black Americans, and 58 percent minorities in general; and the average unit is

in a neighborhood where 25 percent of the population is poor (HUD, 1998). In addition, researchers have also shown that the quality of housing, access to services and resources, and overall quality of life is inferior for many residents of assisted housing units (Popkin, Harris and Cunningham, 2002).

Findings such as these have contributed to creating policies that seek to deconcentrate assisted housing units into higher-income and White neighborhoods. In the most simplified terms, the key assumptions behind those policies are that these new neighborhoods will provide better living conditions, access to services, access to quality education and access to positive role models, which can subsequently improve the quality of life for low-income individuals.

### **3.3 Affordable Housing Programs**

Three main programs that make affordable housing available are 1) public housing developments and the HOPE VI grant program that funds public housing redevelopment, 2) Tenant-based Section 8 Vouchers, and 3) the Low-Income Housing Tax Credit (LIHTC) program. Both the HOPE VI grant and the Section 8 Voucher programs are run by HUD (and in the case of Section 8, managed locally) and have specific goals for income and race deconcentration. The LIHTC program is a federally financed program aimed at developers, and is administered at the state level, often by a state housing agency. (See Appendix for descriptions of public housing/HOPE VI, Section 8 voucher program and the moving to opportunity demonstration; see Section 5.1 for a description of the LIHTC program.)



### **3.4 Program Evaluation**

The verdict on the success of the HUD programs with respect to deconcentration and desegregation is not conclusive, though recent evaluative studies provide excellent insight into results to date (Popkin et. al., 2000). For some residents, mixed-income housing has resulted in employment and educational benefits, yet for others – especially the neediest of public housing residents – this is not the case (Popkin et. al., 2000). Similarly, according to Smith (2002) the success in mixed-income developments (including HOPE VI communities) varies geographically and demographically, and by market and developer, though his overall conclusion is that mixed-income housing is meeting many of its goals.

Despite some of the promising outcomes from the HOPE VI and Section 8 programs, the results from most evaluation studies cannot be used to generalize the effects of these programs, especially with respect to the most needy tenants (Popkin et. al. 2000). This suggests that there are a multitude of factors that influence the success of a desegregation program, and some of these factors may be relevant only at the individual level. To get at these variables a number of studies have included personal follow-up interviews with individuals who have participated in an affordable housing program (Popkin et. al., 2003; Clampet-Lundquist, 2004; Popkin et. al., 2004).

In all of these studies access to transportation is mentioned as either a barrier to moving to a more suburban community or as a drawback to have moved from their prior location. In their analysis of obstacles to desegregating public housing, Popkin et. al. (2003)

consider access to public transportation a contextual obstacle, citing that “Focus group participants from a number of sites reported that the lack of adequate public transportation prevented them from making desegregative moves.” Similar sentiments were reported in Popkin’s 2004 research, “a study of HOPE VI-like relocation in Fort Worth found that most former residents felt their new neighborhoods had less crime, although they were concerned about their lack of access to transportation...” And in her study on mobility decision-making among HOPE VI families in Philadelphia, Susan Clampet-Lundquist (2004) notes, “several people commented that they could not survive in the suburbs since they did not have a car, and suburban access to public transportation can be extremely poor and quite expensive.” Her study also shows that among households who chose Section 8 vouchers over public housing primarily used decision variables that relate to everyday activities, such as public transportation.

In their study of Section 8 rental voucher recipients in Alameda County, California, Varady and Walker (2000) found that even though the destination neighborhoods had access to public transportation (via BART and bus routes), automobile transportation was still essential for households that moved to suburban Alameda communities. Increased automobile dependence likely translates into increased expenditures on transportation in the form of auto loans, insurance, maintenance and fuel.

However, there is a lack of research evaluating the LIHTC program, particularly with respect to awarding the tax credits to projects that expressly promote mixed-income

affordable housing locations<sup>4</sup>. A possible reason for this lack is the already complicated application and approval process and because at the national level, socio-demographic criteria are not relevant for awarding the tax credits.

### **3.5 Does Transportation Matter?**

The two biggest line items in a household budget are housing and transportation (US Department of Labor, 2002), and as household income decreases the burden of transportation expenditures increases (STTP, 2000). Since the bulk of transportation expenditures are automobile related, as expected, disparities exist not only by income but by location as well: inner city residents with access to transit spend less than their suburban counterparts (STTP, 2000). The bottom line, according to the *Driven to Spend* report published by the Surface Transportation Policy Project, is that transportation expenditures vary by where the household is located. With the understanding that transportation plays a significant role in household budgets, especially for low income households, what are the implications for programs designed to move this population to locations that will likely require increased dependency on the automobile and subsequently higher transportation expenditures.

### **3.6 LIHTC Application Criteria**

There is an opportunity, through the distribution of LIHTCs, to make available low-income homes with access to alternative transportation modes, such as buses; the key premise being that greater access to transit will afford residents both greater access to

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<sup>4</sup> An exception is the 2004 Brookings Institution report, "Sitting Affordable Housing: Location and Neighborhood Trends of Low Income Housing Tax Credit Developments in the 1990s." Still, the focus of the report is on income and race characteristics, and transportation access is not discussed.

amenities and lesser reliance on a personal automobile. In North Carolina, the means for giving transit access a high profile in distributing LIHTCs is the Qualified Application Plan (QAP), which “details the selection criteria and application requirements for housing tax credits and tax-exempt bonds” (NCHFA, 2005). Table 2 highlights the application criteria that are relevant to transportation and access to services for the years 2000-2005<sup>5,6,7</sup>.

Table 2. Selected Criteria from NCHFA Qualified Application Plans 2000-2005	
Year	Site Selection Criteria
2000	<p>SITE SUITABILITY (MAXIMUM 40 POINTS)</p> <p>(1) Street and/or access road serving the proposed project has adequate capacity for the volume of new traffic.</p> <p>(2) Site is free from excessive traffic and noise, including that from cars, trains and airplanes, per HUD regulation 24 CFR Part 51 (Appendix P). (3) Site does not enter or exit onto a major high-volume traffic artery. The speed limit and the number of travel lanes in each direction will also be considered. If adverse conditions exist, a traffic study may be required.</p> <p>(4) No obvious physical barriers to development Examples include steep slopes, deep ravines, marshes, wetlands, and excessive overhead utilities.</p>
2001	No change from 2000 QAP
2002	<p>SITE SUITABILITY (MAXIMUM 40 POINTS)</p> <p>(1) Street and/or access road serving the proposed project can support the volume of new traffic. The street should have the necessary traffic controls (i.e., traffic lights, stop signs, turning lanes, etc.) to provide for safe access. Site does not enter or exit onto a major high volume traffic artery. The speed limit and the number of travel lanes in each direction will also be considered. If adverse conditions exist, a traffic study may be required.</p> <p>(2) Sites must be integrated into a residential community and must not be isolated in areas with large amounts of undeveloped land. Surrounding uses must be compatible with the proposed project, and the proposed design compatible with existing architecture in the area. Incompatible uses include adjacent sites with environmental or other problems such as high-voltage transmission lines, sources of excessive noise (using HUD guidelines as the standard), existing and proposed freeways and high traffic corridors, flood hazards, or close proximity to potential odors or pollution from industrial, waste treatment, and agricultural sources.</p> <p>(3) No obvious physical barriers to development should be present. Examples include steep slopes, deep ravines, marshes, wetlands, and excessive overhead utilities. The ideal site for new construction and rehab should be usable and have all its acreage on a gently sloping grade. On renovation projects, the Agency will consider parking areas and sidewalks and their relation to the entryways of all dwelling units. An ideal renovation project would have all parking and sidewalks level with all dwelling unit entryways. The finished grade of all developments should not promote erosion from rainwater.</p>

<sup>5</sup> Criteria for years prior to 2000 are not available electronically; however, in speaking with NCHFA staff, selection criteria for those years is at the most like those for 2000, but more likely less detailed, with no reference to mass transit.

<sup>6</sup> Criteria that are specific to physical site characteristics, such as slope, are considered relevant, as they can influence a person’s ability/preference for walking to a transit stop.

<sup>7</sup> For 2005, applicants must receive 200 points to be considered, with 155 of the possible points coming from the Site and Market Evaluation category and within that 35 possible points are attributable to “site selection,” which includes transit access.

Table 2. Selected Criteria from NCHFA Qualified Application Plans 2000-2005, cont.	
Year	Site Selection Criteria
2003	<p>SITE SUITABILITY (MAXIMUM 60 POINTS)</p> <ul style="list-style-type: none"> <li>• Adequate traffic controls (stop light, turn lanes, ect.)</li> <li>• Burden on public facilities (particularly roads)</li> <li>• Access to mass transit (if applicable)</li> <li>• Degree of on-site negative features and physical barriers that will impede project construction or adversely affect future tenants; for example: power transmission lines and towers, flood hazards, steep slopes, large boulders, ravines, year-round streams, wetlands, and other similar features (for adaptive re-use projects- suitability for residential use and difficulties posed by the building(s), such as limited parking, environmental problems or the need for excessive demolition)</li> <li>• Concentration of affordable housing</li> </ul>
2004	<p>SURROUNDING LAND USES AND AMENITIES (MAXIMUM 65 POINTS)</p> <ul style="list-style-type: none"> <li>• Suitability of surrounding development</li> <li>• Land use pattern is primarily residential (single and multifamily housing) with a balance of other uses (particularly retail and amenities)</li> <li>• Availability, quality and proximity of services, amenities and features: grocery store; mall/strip center; gas/convenience; basic health care; pharmacy; schools/athletic fields; day care/after school; supportive services, public park, library, hospital, community/senior center, basketball/tennis courts, fitness/nature trails, public swimming pool, restaurants, bank/credit union, medical offices, professional services, movie theater, video rental, public safety (fire/police)</li> </ul> <p>SITE SUITABILITY (MAXIMUM 35 POINTS)</p> <ul style="list-style-type: none"> <li>• Adequate traffic controls (stop light, turn lanes, etc.)</li> <li>• Burden on public facilities (particularly roads)</li> <li>• Access to mass transit (if applicable)</li> <li>• Degree of on-site negative features and physical barriers that will impede project construction or adversely affect future tenants; for example: power transmission lines and towers, flood hazards, steep slopes, large boulders, ravines, year-round streams, wetlands, and other similar features (for adaptive re-use projects- suitability for residential use and difficulties posed by the building(s), such as limited parking, environmental problems or the need for excessive demolition)</li> </ul>
2005	<p>SURROUNDING LAND USES AND AMENITIES (MAXIMUM 65 POINTS)</p> <ul style="list-style-type: none"> <li>• Suitability of surrounding development</li> <li>• Land use pattern is residential in character (single and multifamily housing) with a balance of other uses (particularly retail and amenities).</li> <li>• Availability, quality and proximity of services, amenities and features: grocery store; mall/strip center; gas/convenience; basic health care; pharmacy; schools/athletic fields; day care/after school; supportive services, public park, library, hospital, community/senior center, basketball/tennis courts, fitness/nature trails, public swimming pool, restaurants, bank/credit union, medical offices, professional services, movie theater, video rental, public safety (fire/police).</li> </ul> <p>(iii) SITE SUITABILITY (MAXIMUM 35 POINTS)</p> <ul style="list-style-type: none"> <li>• Adequate traffic controls (stop lights, speed limits, turn lanes, etc.).</li> <li>• Burden on public facilities (particularly roads).</li> <li>• Access to mass transit (if applicable).</li> <li>• Degree of on-site negative features and physical barriers that will impede project construction or adversely affect future tenants; for example: power transmission lines and towers, flood hazards, steep slopes, large boulders, ravines, year-round streams, wetlands, and other similar features (for adaptive re-use projects- suitability for residential use and difficulties posed by the building(s), such as limited parking, environmental problems or the need for excessive demolition).</li> <li>• Visibility of buildings and/or location of project sign(s) in relation to traffic corridors.</li> </ul>

As evidenced by the QAP criteria, transportation has consistently been an important site characteristic. However, there are several weaknesses with the current inclusion of transportation criteria. First, it was not until 2003 that the QAP included language specific to mass transit. Thus, properties located before 2003 are, on average, less likely to have adequate transit access<sup>8</sup>. Furthermore, housing is a durable good that is intended to serve residents over decades, therefore, once a property is sited with limited or no transit access, the likelihood of improving that situation becomes solely dependant on the transit agency. Second, beginning with the 2003 QAP, mass transit is listed under “site suitability” as opposed to “surrounding land uses and amenities.” A quick look at most real estate ads in urban areas will show that one of the key amenities properties choose to highlight is proximity to mass transit. Treating transit access as an amenity would send a message to developers that 1) residents will rate a property with access higher than a property without, and 2) that transit access is critical to a successful application. Third, access to mass transit is qualified by the phrase “if applicable,” with the understanding that with close to 50 percent of the population living in rural areas it is not realistic to require transit access across the board. This nuance suggests that there may be a case to be made for differences in criteria for urban and rural development applications. And fourth, it is implied that the criteria are listed in importance. On the one hand this speaks well of transit, as it is included in the most influential category, Site and Market Evaluation; yet within that category, it appears in the least influential section, “site suitability.” In order to better understand the relevance of transit for LIHTC residents in the Triangle, the following section details the trends in LIHTC property locations since

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<sup>8</sup> In this case, access refers to more than Euclidian distance to a transit line, which is what is measured in the following section. Rather, the use of “access” here is with respect to connectivity, presence of a bus stop, presence of a sidewalk, etc.

1987 and their relationship to transit access. The degree to which transit access varies will help identify opportunities to revise selection criteria<sup>9</sup> and to underscore that a greater emphasis be put on proximity to transit.

## **4.0 Methodology**

### **4.1 Data Acquisition**

This analysis uses data from the US Department of Housing and Urban Development database that details the LIHTC properties across the country for the years 1987-2001<sup>10</sup>. Address information for property awards for the years 2002-2005 was obtained from the North Carolina Housing Finance Agency. The LIHTC properties located in Orange, Durham, and Wake counties were geocoded using ESRI Street 2004 map software, resulting in a match rate of 75 percent<sup>11</sup>. The addresses received from NCHFA were geocoded separately and resulted in a match rate of 67 percent<sup>12</sup>. The unmatched addresses were mostly located in Cary, Raleigh, and Durham. There are two primary possibilities for the failure to geocode the addresses including:

- ESRI Street Map 2004 has not been adequately updated, especially with respect to new developments that may be located on new roads or zip codes that have changed, and
- The address information is incomplete in some cases, with missing street numbers or an intersection of two streets is given instead of a typical street address.

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<sup>9</sup> The criteria are revised each year and all recommendations are subject to public comment.

<sup>10</sup> Access LIHTC Data, <http://www.huduser.org/datasets/lihtc.html#data>

<sup>11</sup> Matched with score 80 – 100: 252 (75%)

Matched with score <80: 9 (3%)

Unmatched 77 (23%)

<sup>12</sup> Matched with score 80 – 100: 12 (67%)

Matched with score <80: 1 (1%)

Unmatched 5 (26%)

Use of a different geocoding source would likely improve the match score, however, a better, low cost, source was unavailable. In addition, time limitations precluded obtaining more accurate address information.

Transit shape files were obtained with help from contacts at the Triangle Transit Authority and Durham-Chapel Hill-Carrboro MPO, and through University of North Carolina's GIS data files. The DATA files are from 2002, the Chapel Hill Transit files are from 2004, the CAT files are from 2002, and the TTA files are from 2004.

Census 2000 data was obtained at the block level through the Geolytics CensusCD 2000 Region 3, which is a compilation of the Census Short Form data.

## **4.2 Spatial analysis**

Using the GIS layers mentioned above, map overlays were generated using ESRI ArcMap software, the results of which are presented in Figures 1-3, 5, & 7-9. Assessing the distance between property locations and bus lines involved buffering the bus lines at a distance of a quarter mile as well using the *near* tool to calculate the Euclidian distance from each location to each bus line. Use of the *near* tool gives a general sense of the spatial relationship between transit and LIHTC properties. Further analysis measuring the network distance (i.e., using the street routes that would account for barriers to accessing bus stops) would be a next step in characterizing access.



### **4.3 Data Analysis**

Summary statistics – including mean, min, max, standard deviation – were used to identify temporal trends in the locations of the LIHTC properties.

## **5.0 Analysis**

### **5.1 The LIHTC Program**

In addition to HUD sponsored programs such as HOPE VI and Section 8 tenant vouchers, the federal government has set up the Low Income Housing Tax Credit program, which has been operating since 1986.

The LIHTC Program is an indirect Federal subsidy used to finance the development of affordable rental housing for low-income households. The credits provide the private market with an incentive to invest in affordable rental housing. Federal housing tax credits are awarded to developers of qualified projects. Developers then sell these credits to investors to raise capital (or equity) for their projects, which reduces the debt that the developer would otherwise have to borrow. Because the debt is lower, a tax credit property can in turn offer lower, more affordable rents. Provided the property maintains compliance with the program requirements, investors receive a dollar-for-dollar credit against their Federal tax liability each year over a period of 10 years. The amount of the annual credit is based on the amount invested in the affordable housing. (HUD, 2005a)

Each year, the IRS allocates housing tax credits to designated state agencies-typically state housing finance agencies - which in turn award the credits to developers of qualified projects. States allocate housing tax credits through a competitive process. Federal law

requires that the allocation plan give priority to projects that (a) serve the lowest income families; and (b) are structured to remain affordable for the longest period of time.

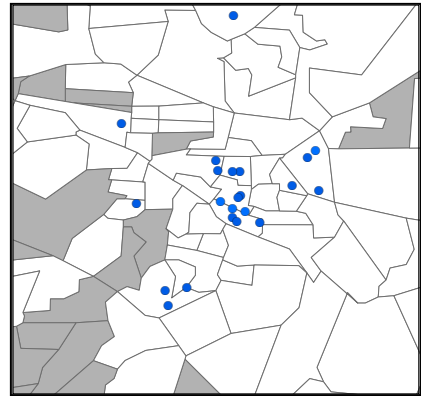
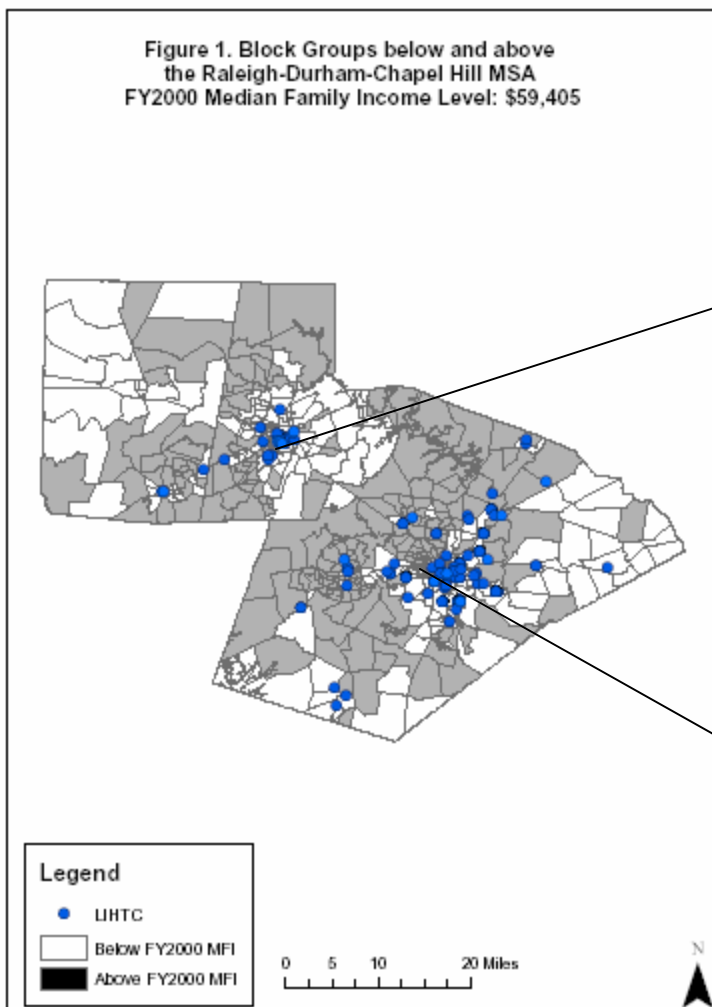
To be eligible for consideration under the LIHTC program by the IRS, a proposed project must:

- Be a residential rental property.
- Commit to one of two possible low-income occupancy threshold requirements.
- Restrict rents, including utility charges, in low-income units.
- Operate under the rent and income restrictions for 30 years or longer, pursuant to written agreements with the agency issuing the tax credits.

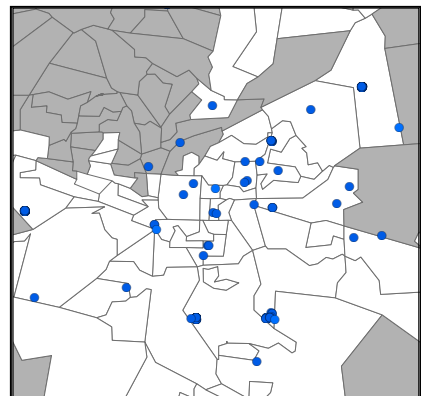
There may also be additional eligibility requirements that are set by the local administrator of the program, as is the case with North Carolina as described above.

## **5.2 A Picture of LIHTC Properties in the Triangle**

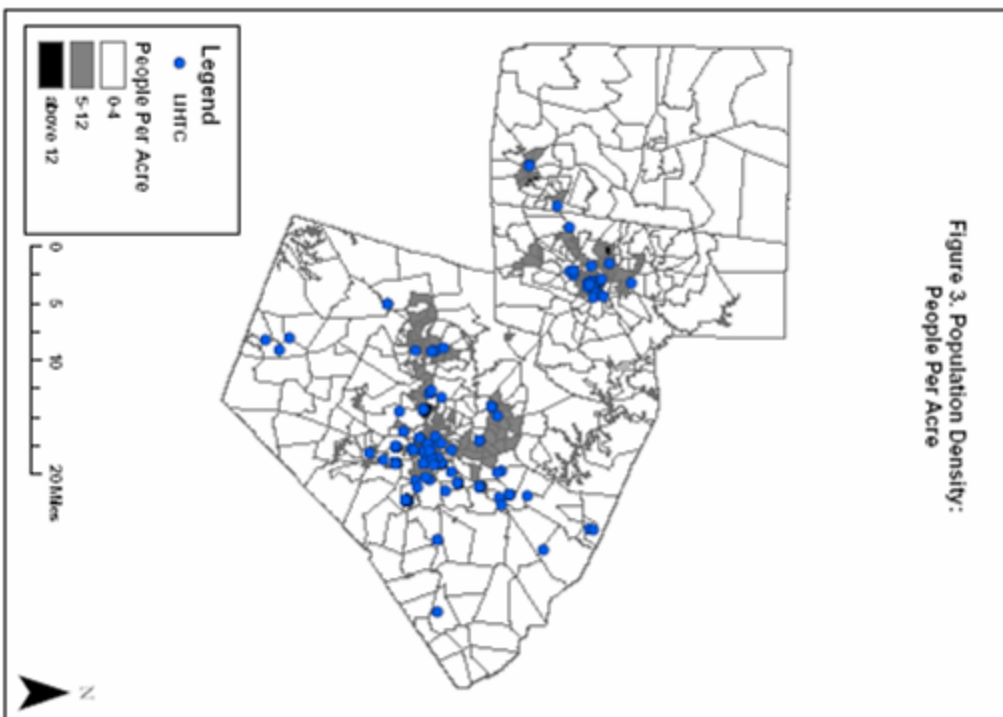
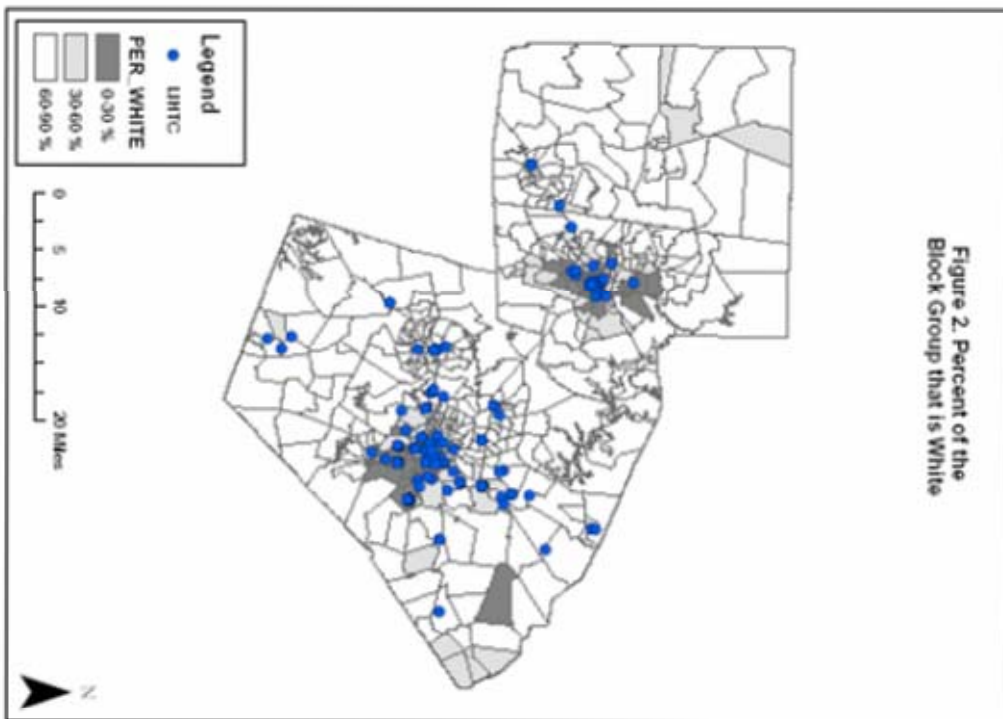
According to the data obtained from HUD, the North Carolina Housing Finance Agency, and the US Census Bureau, affordable housing in the three counties under investigation – Orange, Durham, and Wake – fits the stereotype: high density, low-income and high minority neighborhoods. As illustrated in Figure 1, most LIHTC properties are located in block groups with median family incomes below \$59,405 – the FY2000 MFI for the Raleigh-Durham-Chapel Hill metropolitan statistical area (Census, 2000). Figures 2 and 3 illustrate the race and density characteristics for the study area. As expected, the block groups that house LIHTC properties tend to have lower percentages of white residents, and higher population densities than the counties in general (also see Table 3).



Enlargement of Durham



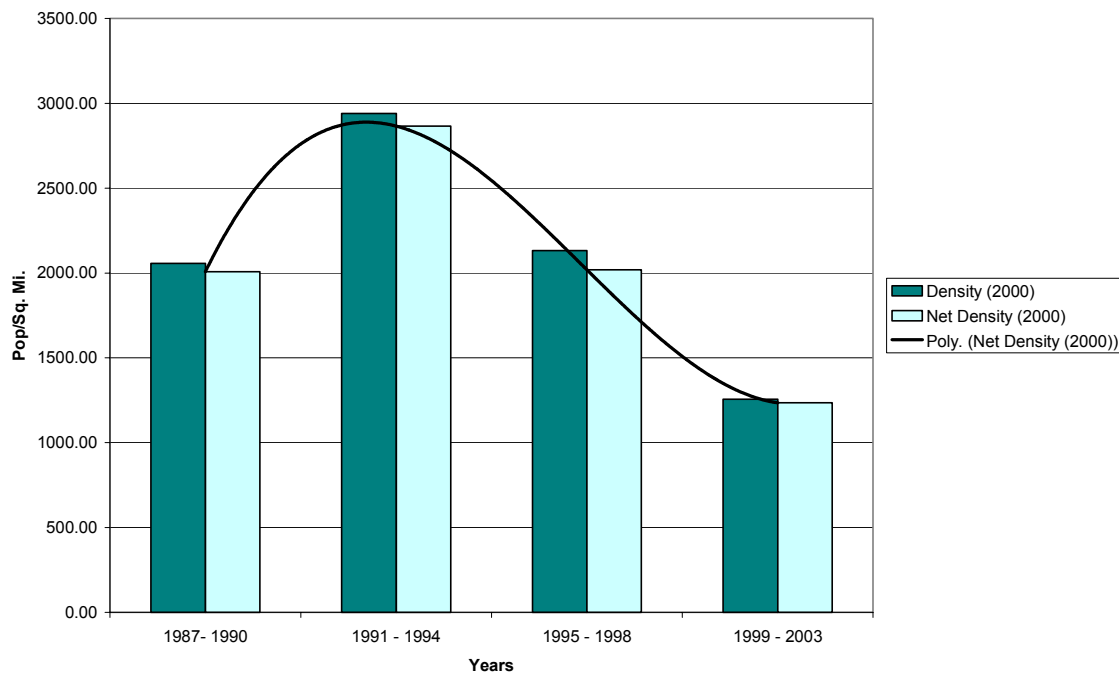
Enlargement of Raleigh



Temporally, however, LIHTC properties are exhibiting trends of moving out of the dense urban areas, as shown in Figure 4 and Table 3. This supports the concern that with time,

LIHTC locations will move to less dense areas which, more often than not, are less served by transit.

**Figure 4. Density of LIHTC Locations in the Triangle**



**Table 3. LIHTC Property Density**

Year	Number of Properties	Total Number of Units	LIHTC population	Total Population (2000)	Total Area (sq mi)	Density (Pop/Sq Mi) (2000)	Net Density (2000)
1987 - 1990	51	433	1039.2	43016	20.91	2057.20	2007.50
1991 - 1994	62	446	1070.4	42278	14.38	2940.06	2865.62
1995 - 1998	129	2320	5568	105139	49.32	2131.77	2018.88
1999 - 2003	21	409	981.6	56270	44.77	1256.87	1234.94

County	Pop/Sq Mi (2000)
Durham	769.2
Orange	288.94
Wake	754.72

### 5.3 A Picture of LIHTC Properties and Transit Access in the Triangle

Slightly more than half of all LIHTC dwelling units are located within a quarter mile of a bus line (Figure 5). Whether the closest bus line provides residents with the access they need to get to and from employment, shopping, recreation and other services cannot be inferred from simple spatial data. However, the overall trend in property location points to increased distance from any bus line (see Table 4 and Figure 6). If development of these properties continues along this trend of locating farther from transit lines, then access to transit will become a limiting factor for a greater number of LIHTC households. This in turn implies increased reliance on the automobile and the associated financial burden of automobile ownership.

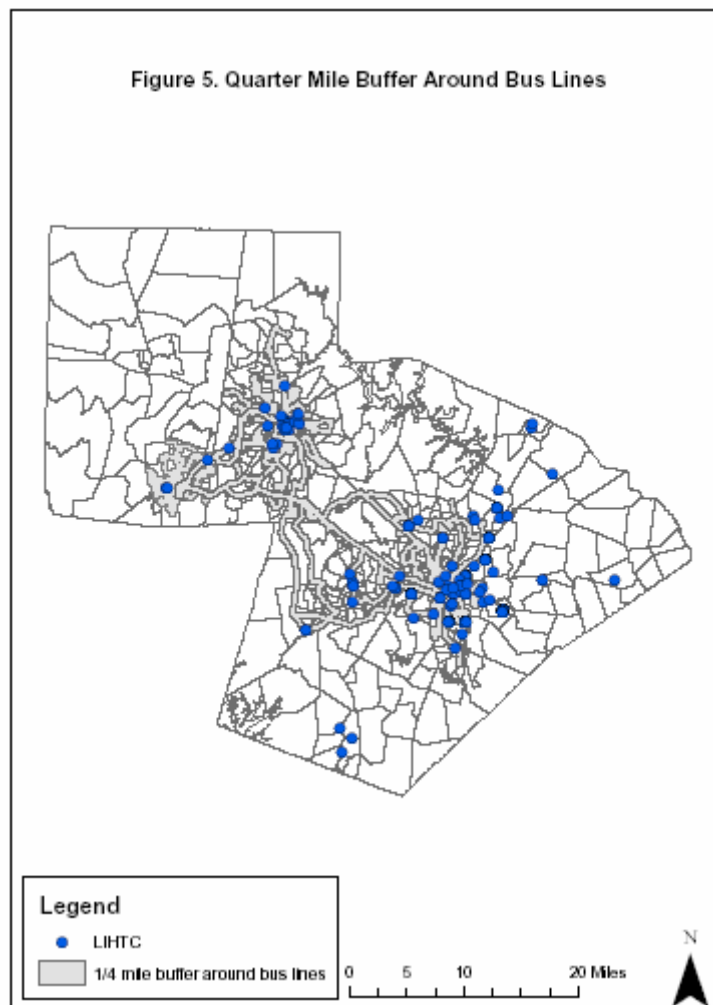
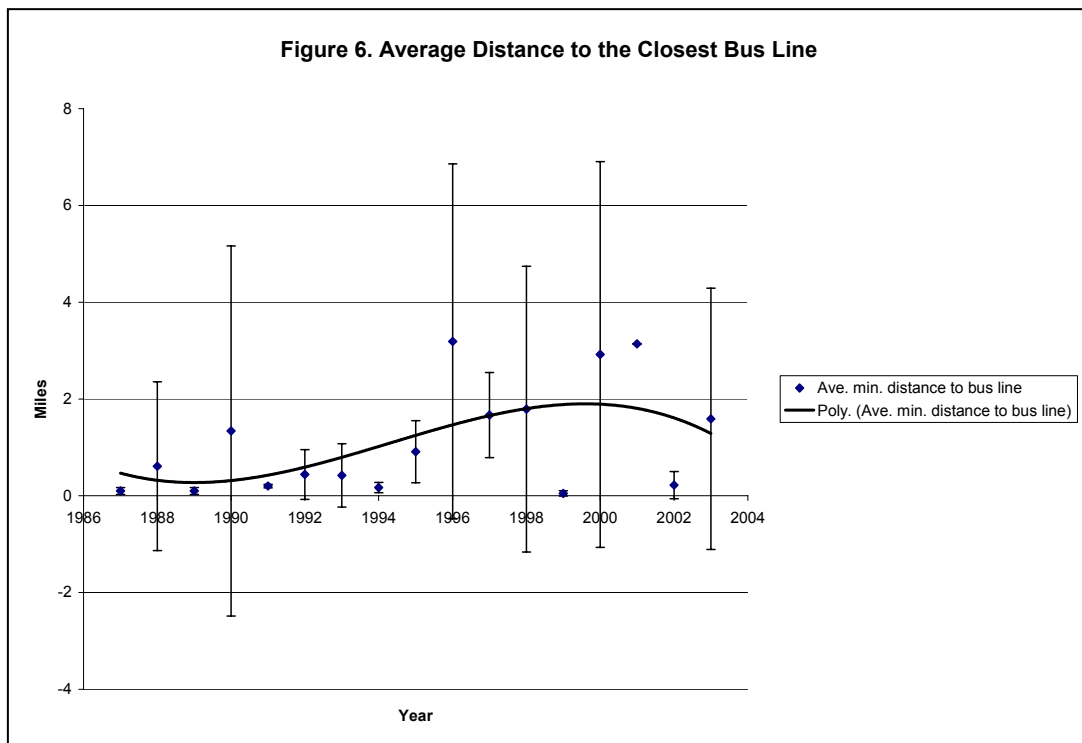


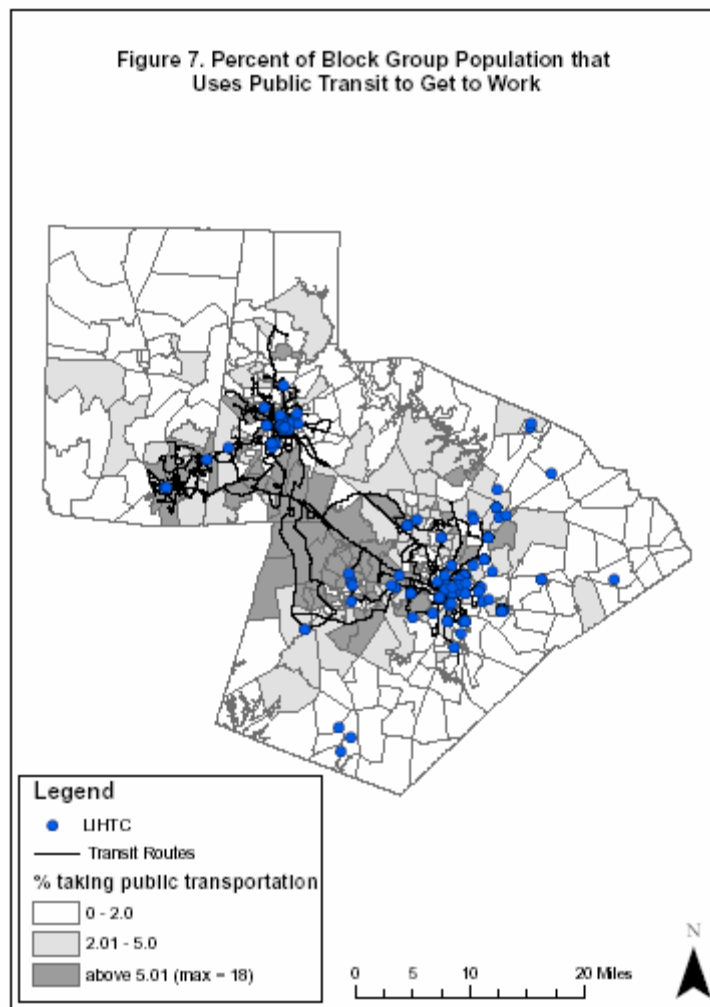
Table 4. LIHTC locations with respect to bus lines; 1987-2003				
Year Put in Service	% DU > 0.25 mi from bus line	Number of	Ave. min. distance from property to	Standard Deviation
1987	0.29	5	0.1	0.07
1988	0.56	91	0.61	1.74
1989	0.08	92	0.1	0.07
1990	0.37	243	1.34	3.83
1991	0.36	33	0.2	0.04
1992	0.19	87	0.44	0.51
1993	0.27	154	0.42	0.66
1994	0.43	184	0.17	0.11
1995	0.5	435	0.91	0.64
1996	0.53	746	3.19	3.67
1997	0.32	1034	1.67	0.88
1998	0.61	129	1.79	2.95
1999	0.27	256	0.05	0.05
2000	0.71	483	2.92	3.99
2001	1	72	3.14	N/A†
2002	0.69	540	0.22	0.28
2003	0‡	84	1.59‡	2.7

† There is no standard deviation for this year because all of the units are in the same property.

‡ There are 7 properties put in service for 2003, however information on the number of dwelling units is given for only one property, where n=84. While the number of units is unknown for most 2003 properties, the location of the properties is known.



Another consideration is transit users. According to Census 2000 block group data, LIHTC properties tend to be located in areas where transit use for work purposes is highest (Figure 7); the exception being that around the city of Durham transit use does not necessarily correspond to LIHTC block group locations. Conducting a resident survey would help to better understand the current extent of LIHTC transit users.





## 6.0 Discussion

The above results have several implications for affordable housing and transit in the Triangle. First, the data indicate that to date transit access is within a quarter mile of at least half of the LIHTC properties. While this is a positive result, there are two limitations to the findings. One, because Euclidian distance was used as the proxy for transit access, the notion of natural or man-made barriers (e.g., steep slope, dead end streets, water bodies, poor pedestrian access, etc.) is not considered, and yet such barriers can have significant impacts on whether or not an individual can realistically access transit. This limitation is likely more significant for older properties versus newer and future properties that more likely to be located in suburban environments where sidewalks and dead-end streets are less prevalent. Transit characteristics, such as frequency and routing, are ignored in the analysis. If the bus does not operate at the times that residents need to use it, or if the route(s) located close to a property do not take residents where they need to go, the fact that a bus line is within a 1/4 mile walk does not translate into regional accessibility. This is particularly important given the fact that some if not many of LHITC property dwellers may work in jobs with schedules that deviate from the regular schedule of the transit agency. Both of these limitations are next steps in understanding how transit and low-income housing interact.

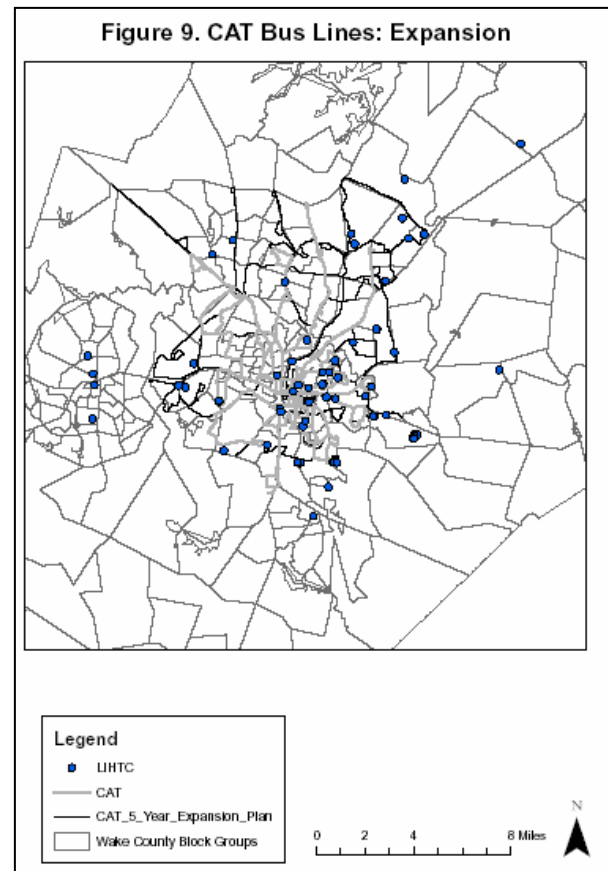
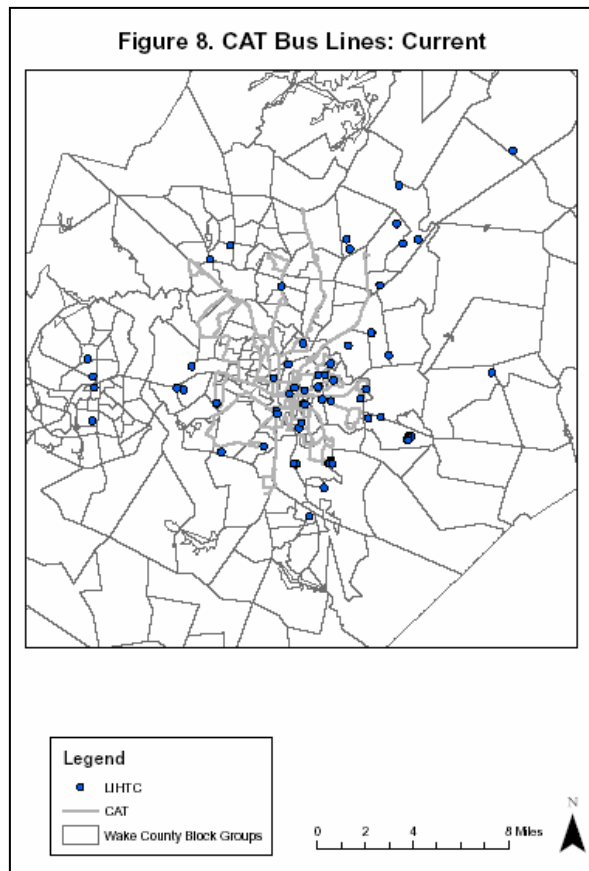
The second implication is that the “Distance to Bus Line” trend indicates a probable shift to less transit access in the future, as illustrated in Figure 6. On average, properties developed in the latter half of the 1990s and early 2000s are further away than properties developed from 1987 – 1995. The polynomial function fitted to the data suggests that

this difference will continue<sup>13</sup>. Additionally, on average, the variation (as expressed by the confidence interval) in the data is more extreme beginning in the later half of the 1990s through 2003. This suggests that more properties are being developed close to *and* far from transit. Understanding this trend can help guide agencies towards increasing transit access. A strong potential for doing so can come from the application/award process of LIHTCs. More generally, the data underscore the importance of motivating developers to coordinate with transit agencies (and vice versa) in order to increase local access to transit and offer opportunities for reducing the financial burden of automobile transportation on low-income households.

Third, it must be noted that efforts at reversing the transit access trend could conflict with fair housing policies that seek to move low-income households to more suburban, less dense locations that are not served well by public transportation. This underscores the need for housing and transit agency coordination. On the one hand, agencies like the NCHFA can increase the importance of transit access in their LIHTC application criteria – in particular for developments in urban areas. On the other hand, transit agencies can consider LIHTC properties when expanding or improving service. An example of this is with the Raleigh public transit system: CAT. The current extent of transit service reaches many LIHTC properties, though the 5-year expansion plan would significantly increase access (see figures 8 & 9).

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<sup>13</sup> The year 2002 brings down the function, but the average distance to transit for all other years after the mid 1990s is increasing.



## 7.0 Conclusion

There are three key observations for the Triangle region that emerged from this research. First, the current snapshot of LIHTC properties with respect to proximity to transit lines is positive. Overall, 50.73 percent of units are within a quarter mile of a bus line and 61.5 percent are within a half-mile. Second, these units are also characteristic of low-income housing in that they are also located in areas of relatively high density, high non-white residents, and below-median incomes. And third, temporal trends in siting LIHTC

properties indicate a possible shift to decreased proximity to bus lines and lower density neighborhoods.

The significance of these observations lies in the following:

- The structure of the LIHTC program provides housing finance agencies the ability to set selection criteria for interested developers, and can thus use that to encourage developers to place a greater emphasis on transit access. In North Carolina (and other states with similar urban/rural splits) this stipulation would be more complicated in that emphasizing transit access must be balanced with reasonableness: developers looking to build in rural areas not serviced by transit should not be penalized for what they cannot offer. Therefore, an urban/rural distinction might be necessary to best use the criteria as a means of increasing transit access.
- The state of low-income housing in North Carolina points to an increased need for constructing more units to serve the low-income population. This implies more opportunities for developers and thus continued competition for tax credits. In such a competitive environment, the ability to influence developer decisions is greater, making transit stipulations more palatable. This must be balanced with not scaring off developer; however, transit access is a strong attractor for potential tenants and should be presented as an amenity that can only increase the attractiveness of a property.
- Because LIHTC units are sometimes acceptors of Section 8 vouchers, and because HOPE VI projects are also eligible for LIHTCs, there is potential for

better serving the low-income renter population by already accounting for transit access through the LIHTC program.

In addition, this research points to several opportunities for further research including: 1) conducting a network analysis of transit access, using bus stop location, 2) identifying percent of transit users among current LIHTC residents and assessing how well the transit systems serve this population (frequency, hours of operation, transfers, etc.) and 3) assessing the feasibility of a dual QAP process for urban and rural developments.

## **Appendix**

### *Public Housing/HOPE VI*

HOPE VI grants are used to demolish or redevelop the worst public housing developments, replacing them with mixed-income communities (Popkin et. a., 2000a). The motivation behind HOPE VI grants is to rebuild the notorious public housing projects into more desirable, higher quality neighborhoods. By integrating incomes in a development, those with lower incomes should experience “life improvements” as they move to housing in neighborhoods that offer poverty deconcentration, higher quality developments and more affordable housing units (Smith, 2002).

### *Section 8 Vouchers*

These vouchers go to the tenant, rather than the landlord, and allow recipients to decide where to live. The key to this program is choice: voucher recipients receive a subsidy to use towards a market-rate unit in a neighborhood of their choosing<sup>14</sup>. A new provision for Section 8 vouchers is the broadening the eligibility requirements to higher income families with the dual intent of serving more households in need and encouraging more mixed-use neighborhoods (Popkin et. al., 2000a; see also Pendall, 2000). Behind the idea of giving low-income households a choice in where they can afford to live, is the intention for these households to move to better neighborhoods. In many cases, the new neighborhoods are often located in the suburbs (Varady and Walker, 2000).

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<sup>14</sup> With Section 8 voucher recipients can rent market-rate units but they are limited by landlords' willingness to accept the vouchers. Location choice has increased for voucher holders since the program's inception in 1974 (see Appendix A in Varady and Walker, 2000).

### *Moving to Opportunity*

Complementary to HOPE VI and Section 8 are information-based program, including mobility counseling and the Moving-to-Opportunity (MTO) demonstration, are complements to the supply- and demand-side programs mentioned above (Popkin et. al., 2002). The essential components of mobility counseling are just as the name implies: affordable housing recipients receive counseling in their pursuit for new housing opportunities. For example, in the MTO demonstration one group of program participants received additional help—in comparison to the two other groups in the study—such as advising on issues such as available units, out of pocket costs, neighborhood amenities, etc., so they could more easily identify opportunities to move to areas with much less poverty (Popkin et. al., 2002; Goering et. al., 2002).

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